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ABSTRACT

A summary of a working conference on state funding of public higher education is presented, with attention to costing in higher education, financial planning models for state agencies, dimensions and determinants of tuition policy, measuring the effectiveness of state agencies for higher education, and a review of state-level comparative data in higher education. Most of the conference members were executive officers from state higher education agencies, many of whom belonged to the State Higher Education Executive Officers Association or the National Center for Higher Education Management Systems. Discussion on costing at the state level addressed the utility of cost data in resource allocation decisions, the usefulness and meaning of "standard costs," and the relationship between cost and value and between cost and quality. The possibility of modeling capital renovation and the feasibility of developing a source/use or source/recipient matrix for funds flowing to higher education at the state level were also discussed. Considerable agreement was reached about the most important criteria for evaluating state-level comparative analysis, including data comprehensiveness, timeliness, and relevance. A list of conference participants and their affiliations is included. (SW)

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Proceedings

A Working Conference

on

Issues in State Funding of Public Higher Education

March 30, 1984

San Francisco, California

HE 019 653

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Foreword

More than three-fourths of the students in our nation's colleges and universities are enrolled in public institutions. The bulk of the funding for everyday operations in this sector--it amounts to tens of billions of dollars in direct costs alone--comes from the states. In addition, the states are primarily responsible for capital construction and capital outlays for equipment. Clearly the stakes are high for state funding of higher education. Little wonder, then, that it is the topic of much discussion.

This document is a part of that ongoing discussion. It reports on a working conference in which a number of individuals with responsibilities for, and much experience in, state funding of higher education shared their ideas on several current issues. The issues included several aspects of costing in higher education, financial planning models for state agencies, dimensions and determinants of tuition policy, measuring the effectiveness of state agencies for higher education, and a review of state-level comparative data in higher education. The sharing of ideas and perspectives was meant to generate a sense, if not a precise delineation, of the kinds of issues and problems that might be appropriate subject matter for research and development.

The idea for the conference originated in the context of a project at the National Center for Higher Education Management Systems (NCHEMS) called "retrenchment and reallocation." This project, which is funded by the National Institute of Education (NIE), has been under way for several years. It has had as its focus several more or less technical issues related to formula funding and costing. In particular, new formula

approaches for responding to enrollment change, marginal-costing techniques, and aspects of statistical cost estimation have been investigated. A general framework piece on state funding of public higher education has also been developed as part of the project. Within this context, it has been appropriate to bring together groups of knowledgeable people to discuss project-related issues from a variety of perspectives, but especially those of practitioners from both the state and institutional levels. Such discussions help to focus the continued development of the project, and they also constitute a forum for the exchange of ideas which is itself a project objective.

This document reports on the second of two working conferences. The first was held in Boulder, Colorado in August, 1983. The topics discussed in the first conference included the following: ways of conceptualizing state priorities for higher education; the basic relationships between the state and its higher education institutions; ways in which states were attempting to build dimensions of quality into funding mechanisms and practices that traditionally have been thoroughly dominated by quantitative dimensions; the use of incentives in the budgeting and funding process; changes in, and ramifications of, the nature and extent of the management flexibility allowed the institutions by the states; a variety of costing issues including standard, constructed, and marginal costs and the so-called revenue theory of costs; developments and strategies in formula funding; and a research agenda.

To address these issues, the first conference brought together essentially three types of individuals: state higher education finance officers, scholars specializing in higher education finance, and individuals from

several organizations that have an interest in the interface between states and higher education institutions (the National Association of College and University Business Officers, the Education Commission of the States, the Western Interstate Commission for Higher Education, the State Higher Education Executive Officers, the Southern Regional Education Board, and the National Center for Higher Education Management Systems). A detailed account of the discussions held can be found in the published proceedings available from NCHEMS.

In terms of professional responsibilities, a somewhat narrower collection of individuals was brought together for the second conference. For some years, SHEEO and NCHEMS have worked together on a variety of projects and tasks. The second conference provided a useful opportunity for representatives from the two organizations to meet and discuss at length both some of the issues of the day as well as prospects for further collaboration. As the list of participants indicates, most of the conference members consisted of executive officers from the state higher education agencies. These officers (excepting a few who could not attend) make up the Executive Committee of SHEEO. In addition to those participants, several finance officers from state higher education agencies were also present along with NCHEMS staff.

The conference was organized as a working meeting in which there were no formal presentations. A series of semi-structured discussions were held instead, around the series of issues mentioned earlier. The agenda was established by a planning group consisting of James Mingle, Executive Secretary for SHEEO, and Dennis Jones and Paul Brinkman from NCHEMS. SHEEO and NCHEMS jointly sponsored the conference, with the National

Institute of Education, through its funding of the Retrenchment and Reallocation project at NCHEMS, paying for most of the travel expenses for participants.

In what follows, I have attempted to capture the spirit of the discussions, as well as at least the outlines of what was said. There is no intent to provide a verbatum transcription of the discussions. Thus there is an element of interpretation in what follows, for which I take full responsibility.

Paul Brinkman
NCHEMS

Participant List

A Working Conference
on
Issues in State Funding of Public Higher Education

San Francisco, California - March 30, 1984

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Discussion Summaries

I. Costing at the State Level

There were two overriding themes in the discussion of cost data at the state level, both having to do with fundamental issues. The first was whether or not there was any need at all for such data. The second dealt with the costs, or cost elements, that ought to be understood and monitored at the state level.

The comments with respect to the first issue indicated clearly that cost data can play a very different role from one state to the next. On one end of the spectrum are those states in which costs have no bearing on funding requests. That is, there is no apparent, or at least no explicit, connection between the cost of the services provided by the institutions and the resources they are given to provide those services. In other states, cost data have been useful both in the defense of higher education funding requests and for educating funders generally about the ways in which colleges and universities operate. Several other participants indicated that cost data did have an impact on state funding, but still another told of cost data being available for fifteen years and yet having very little impact.

By way of summary statements about cost data in general at the state level, it was argued that, in the end, asking for resources and allocating them once received have to have some measure of rationality. Cost data can provide at least some portion of that rationality, even if, as is often the case, they are neither definitive nor the decisive element in the decisionmaking process. It was also noted that cost data could be

particularly useful when reallocating resources. Presumably this would be done within the framework of a larger, more inclusive cost-benefit analysis. Finally, it was argued that the utility of cost data is very much a function of what needs to be accomplished. Like most data, those on costs cannot be expected to be universely helpful. Too much depends on both purpose and context, as the mixed results across states amply demonstrate.

The discussion then turned to specific elements of cost that have been shown to be, or might become, useful at the state level. So-called "standard costs" were the first element to be considered. As the discussion evolved, it became apparent that the term "standard cost" could be taken in two different, albeit related, ways. On the one hand, it might mean what costs should be. One might reach that perspective through what are sometimes called constructed costs. These costs may also be referred to as synthetic or engineering costs. They are arrived at through an engineering type estimating process in which the production process, or the service provision and delivery process, is analyzed into its component parts. The overall cost estimate is, to simplify, a sum of the costs of the components. In this fashion, one could conceivably arrive at what the costs of some proposed activity ought to be, assuming that the component analysis could be successfully undertaken.

But standard costs might also be understood in a somewhat less involved sense as being simply what costs are--say for a representative sample of comparable institutions. The point here seemed to be that the rationale for having standard costs in the first place is to establish some kind of evaluative framework. (This particular point was also stressed in the

first conference.) Comparative costs could conceivably provide the standard that is being sought. Average behavior or performance, then, would be the benchmark against which particular cost centers could be evaluated.

Some related issues were also reviewed. For one thing, it may be that the term standard costs raises our expectations too high, when all we really mean, or need, is some sense of what an adequate level of expenditures might be. Continuing on that theme, several participants mentioned the utility of being able to determine where the "floor" might be in terms of resources needed for some program or service. Others were willing to settle for knowing the range of reasonable costs.

There was a short, and rather inconclusive, discussion of whether or not what was needed was a better grasp of certain costs that required some technical development. Mentioned in this context were marginal costs and fixed and variable costs. While some participants thought that further technical development was called for, others felt that agency staff already had more technical know-how at their disposal than they could constructively apply.

A plea was made for developing a number of new cost elements and cost ratios. In particular, costs related to computers were mentioned in this context, as were other cost ratios that might be changing because of technological or other developments affecting the ways in which educational services are provided.

Several old cost elements were also mentioned as having some priority at the state level. Data on workloads and faculty productivity generally

were stressed by one participant. These important cost determinants (other things being equal) are not available in national data bases, and are thus difficult to obtain for comparative purposes among states or among institutions. Both the representatives from SHEEO's executive offices and from NCHEMS reported the occasional inquiries they receive regarding such data. It was also noted, however, that blaming national data systems, particularly HEGIS, was not appropriate in light of the extreme complexity of the workload measurements. The chances of obtaining comparable data on a nationwide basis were judged to be relatively poor. In addition to workload data, mention was made of the need to learn more about non-elective costs, such as those incurred in responding to federal regulations (health and safety, access for the handicapped, and so on). The importance of monitoring proportionate costs, such as the cost of administration as a proportion of instructional costs, was also noted.

The discussion of cost elements took another twist as well. Concern was expressed about the short- and long-run effects of changes in the availability of resources. In other words, what really dos happen to an institution and its ability to provide services when the amount of money it spends per unit (students or credit hours) changes? In the short run, say over the course of a budget cycle or two, the corresponding changes may be relatively small, perhaps virtually immaterial. But what about in the long run? What happens, for instance, to the faculty--their morale, their willingness to stay at the institution--when their salaries fall consistently behind those of colleagues either in other higher education institutions or in industry? The general feeling was that our understanding of these matters was inadequate.

This particular theme was further developed in reference to the relationships between cost and value added, and cost and quality. The latter relationship has been a matter of concern for some time, but has never been resolved to everyone's satisfaction. While data can be brought to bear indicating that the relationship between, say, cost-per-student and quality is positive but weak, most such data can be challenged on the grounds that the dependent variable, quality, has been incorrectly or inadequately defined. There was considerable disagreement among the representatives from the various states as to the political importance of the quality issue. Clearly, in some of the states represented, quality was an important issue within the legislative appropriations context. Of course, and perhaps especially in the absence of relatively well understood links between expenditure levels and quality, the legislative interest may take on forms other than increased funding. Increased regulation, as in the form of mandated tests, may be the more likely result.

Similarly, the relationship between costs and value added is not well understood. Value added in this context refers to the benefits received by those who partake in higher education. In particular, it usually refers to the knowledge and skills that are acquired by virtue of enrolling in college. Implementation of value added funding mechanisms is probably still some time away. A few states, Tennessee being the most celebrated, have moved toward at least a modest reliance on performance funding. The performance measures are not yet heavily oriented toward the strict pre-test, post-test value-added approach. The ramifications of moving in that direction need to be explored, and the sooner the better.

The last costing issue to be discussed revolved around a suggestion for a cost study. The most unique aspect of the suggestion was the proposed unit of analysis--colleges within a university. As a rule, cost analyses have focused either at the institutional level or the departmental level (with a few exceptions). Engineering colleges in particular were thought to be useful candidates for this analysis. The data would be relatively straightforward: levels of support, average salaries, expenditures per student, and the like. The analysis would cover roughly fifteen such colleges. The intent would be to provide comparative data to help state agency officials evaluate funding and output levels at institutions within their purview. Others felt that this type of basic cost analysis ought also to be directed toward professional schools. Still others in the group felt that at least in many states there was already plenty of the typical cost data available. They went on to argue for the type of analysis that would link differences in delivery modes to differences in costs and to differences in the quality of the outcomes.

II. Financial Planning

One of the areas of possible collaboration between SHEEO and NCHEMS is in the construction of models for financial planning at the state agency level. The underlying rationale for pursuing the prospects for collaboration is that on the one hand, the state agencies have, or could get, the data. They also have the need, presumably, for a modeling capability in order to manipulate the data so as to generate information useful for decisionmaking. On the other hand, NCHEMS has a long history of developing models for higher education. And, most recently, a division within the organization has been devoted to the development of models that

operate in the microcomputer environment. Such models, if designed specifically to meet the needs of the state higher education agencies, would have the important advantage of being operable on hardware and software well within the budgetary and personnel constraints within which most of the state agencies operate. Furthermore, because of the microcomputer network being established among the respective agencies in the various states, data from the models could conceivably be quickly transferred electronically from one state to another. Within this framework, then, two possible areas for developing models were reviewed.

The first possibility received a relatively brief hearing. It had to do with modeling capital renovation. The basic idea discussed was developing a model that could predict (roughly speaking) when renovations would be needed. The predictive power would come from a set of rules of thumb that indicate about how long the major subsystems--electrical, heating, plumbing, roofs, and so on--in a building of a given type can be expected to last before repairs or major maintenance will be needed. These rules have already been established for the most part. Incorporating them within a model for higher education would appear to be a manageable project. The model could be extended to include ways of connecting capital spending and operating costs.

A second possible modeling effort generated more discussion. The idea put forward was the development of a source/use or source/recipient matrix for funds flowing to higher education at the state level of aggregation. The flow of funds within and into the state would be traced from the provider of the funds, through any intermediaries, to the ultimate user of the funds. In addition, the use to which the funds were put would also be

documented. Steps involved in developing the model would include the initial conceptualization of the actors (for example, state government, federal government, students, philanthropic organizations, and so on) and their relationships (for example, appropriations, student aid grants, tuition, private gifts, and so on). While much is already well understood in this regard, the conceptualization stage would be needed to establish levels of disaggregation, allocation algorithms, and the like. Once the data elements were defined and agreed upon, data gathering and operationalizing the model in electronic, computerized form would complete the process. Putting the model in electronic form would allow it to become more of a planning tool in which "what if" and sensitivity analyses could easily be conducted.

The discussion focused on the relative utility of this type of model for the various states. It was suggested that it would be least useful in states where the primary revenue sources are relatively few in number. Utility would be higher where the revenue structure was more complex, and the utility would be especially high in governing board states. Indeed, a participant from a governing board state reported having already developed a type of revenue/expenditure matrix as a management tool.

Beyond the generalities, however, there was considerable question as to precisely what sort of issues would be, or could be, addressed by the model. One participant argued, for instance, that the only use would be to track how special funds are shifted around. Others saw a much wider set of uses, depending on the level of ~~dis~~aggregation. Some participants felt that the more fruitful level was that of the institutions, but others saw potential in developing the model from the state perspective. They

argued that the state perspective was more than simply the sum of the institutional perspectives, and that it would be useful for the state to know in overall terms how much in the way of resources was going to students, to institutions, into renovations, and so on. One participant who had developed a source/use matrix for the universities in his state reported two ways in which his agency used the matrix. The first being the basic or standard use, which amounts to a general funds flow analysis. The second, much narrower use was as a tool to help analyze student aid trade-offs.

While the general concept of a source/use matrix was viewed favorably, the participants were unclear whether the benefits of attempting to share data through the model would be worthwhile. There would be some value in seeing the flow of funds in its entirety in other states, but it might not be sufficient to offset the cost of achieving data comparability. And, as in other areas of possible tool development, the states are sufficiently unique that a universal model might have to be too simplistic to be of any real value.

III. Tuition Policy

A somewhat brief discussion was held around the topic of tuition policy. The issues raised initially were whether a study ought to be conducted that would attempt to understand more about how tuition policies were in fact established at the state level, and whether some attempt should be made to project tuition costs (to the students) and tuition revenues (to the institutions) given different assumptions about student aid levels, state appropriations, family incomes, and the like. Neither of these two

issues were received sympathetically. State agencies, it was argued, understand how tuition policy is established in their own state, and would not benefit appreciably from learning what went on elsewhere. Projecting tuition costs and revenues was thought to be extremely difficult, if the horizon was more than just the immediate budget cycle.

There was some additional, more favorable discussion about how one could determine the total costs to students. The participants shared illustrations of the innovative ways institutions had found to raise their fees. Because fee structures are sometimes quite complex, simple ratios expressing the student contribution, particularly the ratio of tuition revenue to educational and general revenues, can be misleading. They tend to underestimate the actual contribution by masking a variety of incidental fees as well as expenditures for products and services provided through auxiliary enterprises.

Interest was also expressed in a study that would determine tuition elasticities by state. Some concern was evident regarding the possible dampening effect on enrollments of continuing tuition increases. The participants were unclear as to just what lessons to draw from the research on student demand, or from their own experience with tuition increases and enrollment.

IV. Measures of Effectiveness at the State Level

Another brief discussion was held around the general theme of measuring effectiveness at the state level. On the one hand, the focus could be on the state agencies for higher education. Or, one could attempt to assess the effectiveness of state systems of higher education.

With respect to the first perspective, it was noted that one study of the State Higher Education Executive Officers had already been done. In addition, some states have so-called "sunset" laws, and many have legislative or other types of performance audit. In short, while some participants were clearly interested in the effectiveness issue and how it might be measured, others were not.

A few comments were also made regarding coordinating board commissions. Measuring the effectiveness of the professional staff of the board is one thing, but assessing the work of a board commission is quite another. It was noted that, unfortunately, there was no such thing as the Association of Governing Boards (AGB) for members of coordinating board commissions. As a result, opportunities for professional development for these individuals is extremely limited. This situation prompted one participant to suggest that a booklet be prepared for new commission members, establishing the guidelines within which the commissioners should operate.

The discussion then turned briefly to the prospects for identifying measures of effectiveness for entire systems of higher education. It was noted that organizational theorists have for some time been addressing the question of effectiveness at the single or individual organizational level, and that NCHEMS has had a project underway for several years designed to use organizational theories to develop effectiveness measures for higher education institutions. The question raised was whether it would be feasible to assess a system of institutions in a similar fashion.

The possibility was raised that some of the institutional health ratios being considered as part of a joint project involving the Council on Postsecondary Accreditation (COPA) and NCHEMS might be adjusted or revised

to work at the system level. For example, it might be asked how many of the institutions in a system had developed some form of retrenchment plans. In the end, however, the effectiveness of a system of institutions would have to be measured against the needs and goals of the various constituents of higher education. From that perspective, such a project would be anything but a trivial undertaking. State goals for higher education, for instance, are seldom expressed explicitly, so considerable work might be required even before the tough measurement issues could be addressed.

V. Comparative Data on Higher Education

Comparative data on higher education continues to be a source of controversy, and for most who work with the data, also a source of alternating periods of hope and despair. It seems that the demand for the data is as insatiable as the problems with it are never ending. The discussion at the conference proceeded along two lines. First, several of the more prominent, annual comparative data reports at the state level were reviewed. Second, a variety of concerns about comparative data issues at the state level were shared.

The annual reports that were discussed included the following: the McCoy-Halstead report on higher education financing in the fifty states; the state appropriation data compiled by Chambers; Halstead's System Support Index; the State Profiles jointly produced by SHEEO and NCHEMS; the HEGIS state survey recently begun by the National Center for Education Statistics; and the data exchange project under development by the State Higher Education Finance Officers (SHEFO). Depending on the report,

reviewing these efforts sometimes entailed a progress report, an elaboration of the underlying methodology, or a critique of inadequacies.

There was a considerable degree of consensus among the participants as to the most critical criteria for evaluating any state-level comparative analysis. A useful report must be both comprehensive and timely. But therein lies a dilemma: how to meet both criteria simultaneously. Comprehensiveness entails providing enough data so that the overall situation in a state can be understood. Timeliness entails having the current year's data in hand by October, so that it can have maximum utility in the legislative process. The discussion revealed that in the judgment of the conference participants, no one report met both criteria. The McCoy-Halstead report, for instance, was complimented for its comprehensiveness, but its lack of timeliness was seen as a detriment. The Chambers data are timely, but with a focus (on appropriations) that is too narrow in scope for many purposes. Efforts on the part of the SHEFOs to develop their own, rather modest data exchange procedures may prove to be a useful compromise. At the time of the conference, however, these procedures had not yet been fully tested much less implemented.

In the subsequent, free flowing discussion of comparative data issues, the following points received some emphasis. First, despite the considerable effort that has already been made, it will still take a lot of hard work to produce a good national reporting system. Indeed, it may never happen. The individual states remain the focal points, the preeminant nodes as it were, with respect to at least public higher education. In the absence of some compelling reason to adjust to national standards, the needs and interests and predilections of the individual states will always

constitute a formidable barrier to a problem free national data system. The autonomy of individual institutions, privates especially, but to some degree publics also, compounds the problem all the more.

The situation is hardly desparate, however. Improvements have occurred, and will surely continue. And, as one participant observed, so long as data accuracy is within reasonable limits, virtually any comparative report can serve some useful purpose.

Several participants stressed that the role of the state agency for higher education in the production and use of comparative data needs to be considered carefully. Clearly, these agencies are going to be involved as a primary source for the data no matter who else may ultimately compile and report it nationally. In addition, the agencies will inevitably find themselves having to take a position relative to the validity of one or other set of data elements. Whether it is easier to do so when the report comes out under someone else's byline, as opposed to being authored by the agencies themselves--as would be the case for the SHEFO's data exchange project--is not entirely clear.

Data relevance is really a third critical variable, along with comprehensiveness and timeliness. This is particularly true in looking toward the future. For instance, it is likely that vocational education will continue to grow in importance. An adequate comparative data system for vocational education, which it was agreed is still lacking, will become a more important need for the states and the nation as a whole.

VI. Agenda for Collaborative Efforts

The conference concluded with a discussion of the areas that might prove to be the most fruitful for some form of collaboration between SHEEO and NCHEMS. A variety of possibilities were reviewed. Two seemed to have the most merit. The first was an investigation into the relationship between tuition policy, student aid, and total student costs. Perhaps model building would be in order as well, depending on the direction taken by the research. The second project to be recommended by the participants was a cost study of professional schools. The suggestion was not a detailed one, other than that the study should follow the guidelines, or more precisely, should meet the objectives set forth in the earlier discussion of cost data. Essentially, the task would be to generate cost data that would be sufficiently comparable to support management decisions regarding salaries, staffing ratios, and resource utilization generally for whatever type(s) of professional school might be analyzed.